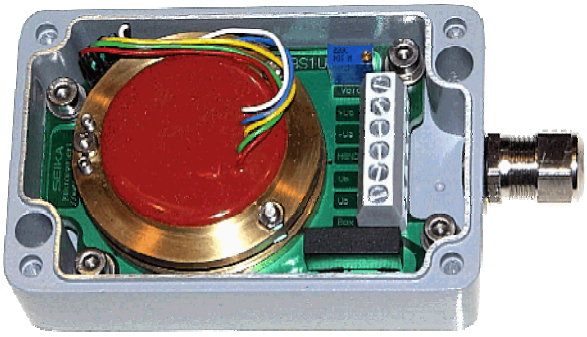


Sensor box containing one highly sensitive servo inclinometer and one signal conditioner with ±5V output

Features

- **robust pressure die cast aluminium housing (IP67) with saltwater proof coating**
- **small measuring range of max. ±1° with extremely high resolution through use of a SEIKA servo inclinometer**
- **integrated signal conditioner with symmetrical ±5Volt output for long transmission lines and minimal interference susceptibility**
- **12V or 24V supply voltage**
- **output signal calibration to customer's specifications**
- **sensor and signal conditioner electrically isolated from housing**
- **extensive EMC protection**
- **highly stable sensor voltage supply**
- **either connection polarity**
- **high mechanical overload resistance**
- **low pass filter with optional choice of cut-off frequency for suppression of interference frequencies**

Description

The SBS1U is a pressure die cast aluminium sensor housing (IP67) with an integrated sensor for highly sensitive, uniaxial acceleration or inclination measurements.
As well as the sensor, the housing contains a signal conditioner with 0...5V output and a separate, highly stable voltage supply. Furthermore, the signal conditioner includes active low pass filters for suppression of interference signals and transient suppression for EMC guarantee. Interference signals caused by unwanted ground currents are eliminated by electrically isolating sensor and signal conditioner from the housing. The terminals provide either two mutually inverse asymmetric 0...5V or one symmetrical ±5V output voltages.
The compact metal cable gland and small housing size in combination with the max. 6-wire connection enable the use of this high quality measuring system in harsh operating conditions.

Application

The SBS1U is suitable for applications requiring extremely precise inclination or acceleration measurements under harsh circumstances and returning of an analog signal output. Typical areas of successful application include stability monitoring of buildings and machinery and inclination monitoring on bridges, dams, towers, tunnels, slopes and structures in danger of collapse or earthquakes.

SEIKA Mikrosystemtechnik GmbH - Söllerweg 1 - D-87487 Wiggensbach - Tel.: +49 8370 9290070

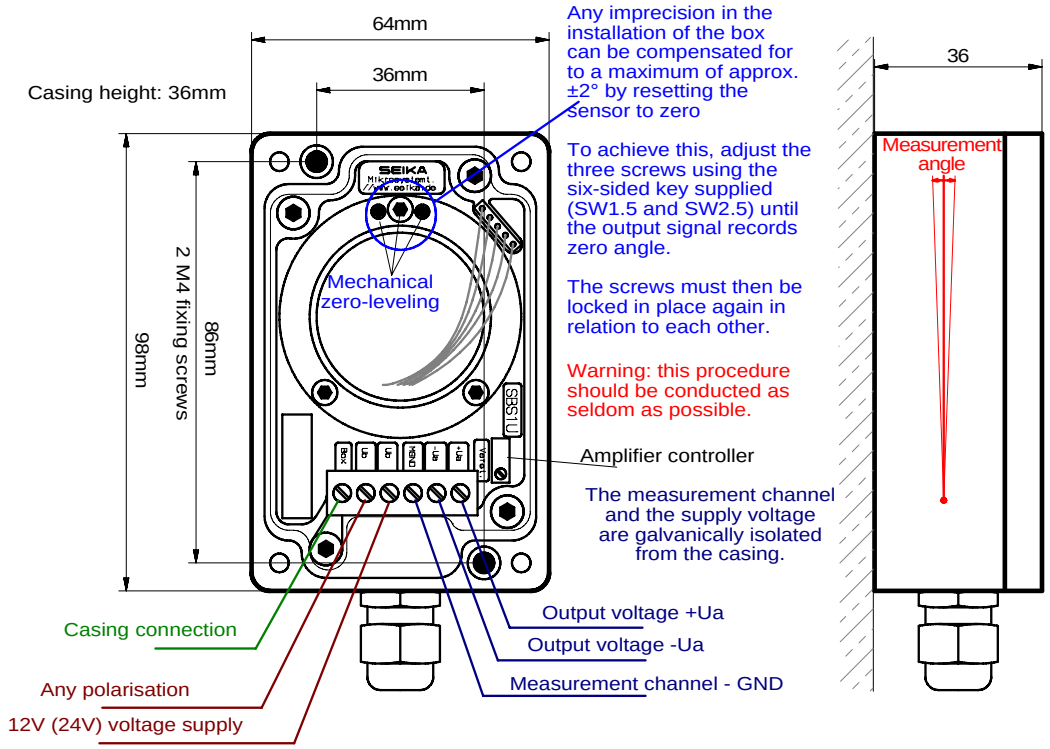
Internet: http://www.seika.de - http://www.seika.net - Email: seika@seika.de

Technical Specifications

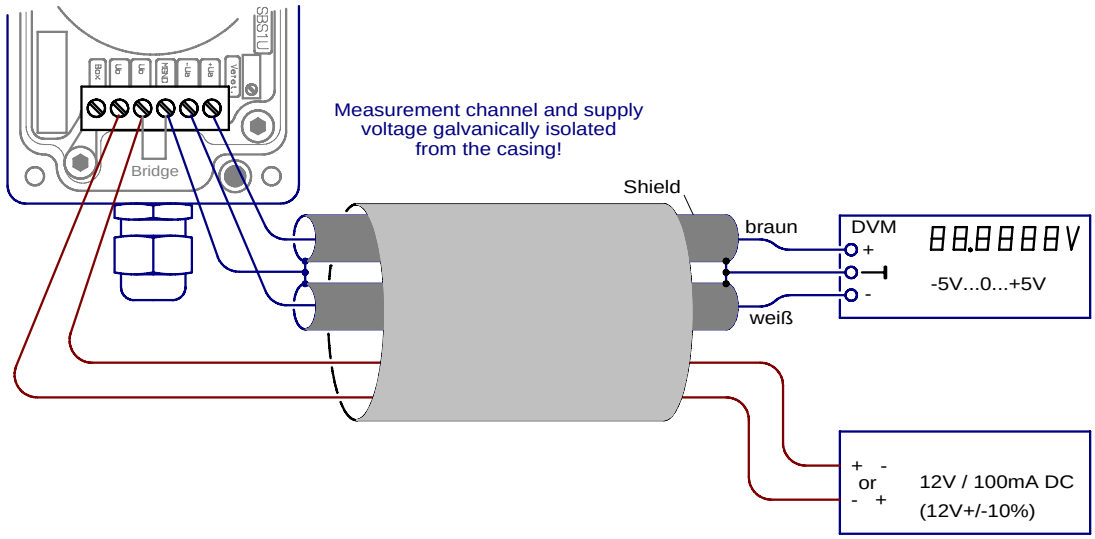
Terminals	6 x 1,5mm^2
Cable fixing	PG9, clamping range 6.5mm … 9.5mm
Measuring range	max. ±1degree , smaller ranges optional
Resolution	0.01arc seconds = 48µm/km!
Degree of protection	IP67
Mounting orientation	see drawing
Supply voltage optional	12Volt oder 24Volt (±10%)
Operating current	ca. 100mA
Normalized asymmetric output voltage range (GND -> Ua+)	0.5V ... 4.5V
Normalized asymmetric output voltage range (GND -> Ua-)	4.5V ... 0.5V
Normalized symmetric output voltage range (Ua- -> Ua+)	-4V ... +4V
Asymmetric zero output voltage (GND -> Ua+)	2.5Volt
Asymmetric zero output voltage (GND -> Ua-)	2.5Volt
Symmetric zero output voltage (Ua- -> Ua+)	0 Volt
Output impedance	Approx. 100 Ohm
Recommended cable	see drawing
Cable length taking voltage drop due to the operating current into account	any (e.g. 500m for 12V or 1km for 15V voltage supply and using the recommended or equivalent cable)
Capacitive output loading capacity	any
Resistive output loading capacity	greater than 100 kOhm
Output driver	operational amplifier TLC2274
Adjustable variable	amplification
Signal rise time (to 98% of step input)	approx. 2 seconds
Step input response	PT2
Operating temperature	-40°C ... +85°C
Mechanical angle adjustment range	±2° (angle)

Options: special measuring ranges, calibration record, partial silicon encapsulation, custom wiring

Dimensions (in mm) and Connections



Cable connections



Recommended cable: LIYY-LIYCY 4x0.5/56 (by Metrofunk Berlin)